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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/069,372 | 06/24/2002 | Alfonsus Maria Bervoets | BERVOETS=2 | 1381 |

26652 7590 03/08/2005

AT&T CORP.
P.O. BOX 4110
MIDDLETOWN, NJ 07748

| EXAMINER | |
|---|---|
| SHIMIZU, MATSUICHIRO | |
| **ART UNIT** | **PAPER NUMBER** |
| 2635 | |

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/069,372 | BERVOETS ET AL. | |
| | Examiner | Art Unit | |
| | Matsuichiro Shimizu | 2635 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *20 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6 and 8* is/are rejected.

7)☒ Claim(s) *5 and 7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

### *Response to Amendment*

The examiner withdraws the claim objection in view of correction provided by the amendment filed on 10/20/04, and therefore withdraws objection to claims 3-4,6 and 8.

The examiner withdraws objection to abstract in view of correction provided by the amendment filed on 10/20/04.

The examiner acknowledges currently amended claims 1-8.

### *Response to Arguments*

Applicant's arguments with respect to claims 1-5, 10-12 and 14-27 have been considered but are moot in view of the new grounds of rejection provided by a paragraph (col. 10, lines53 to col.11, line 10) of O'Connor et al. (5,648,767).

Regarding applicant's argument (lines 1-6, page 7), the examiner maintains that O'Connor teaches said measuring station comprises: - a first receiver (Fig. 11, B1 receiver) for receiving said signal through said antenna means at the one measuring point and - a second receiver (Fig. 11, B2 receiver) for receiving said signal through said antenna means at the other measuring point, - high frequency phase measuring means (Fig. 6, col. 3, lines 40-52, phase difference; col. 5, lines 21-26, high frequency requiring intermediate frequency (12.5 MHz)) measuring the phase difference between the output signal of the first receiver and the output signal of the second receiver, - evaluation means which, based on the measured phase difference, determines where the transponder passes said line segment.

Rejection claims 1-4, 6 and 8 follows:

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2,4 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by O'Connor et al. (5,648,767).

Regarding claim 1, O'Connor teaches a system for determining the position of a transponder (Fig. 11, B1 and B2 are perpendicular to A1 and A2 and B1, B2, A1 and A2 are over the transponder 30 and A1 and A2 are along the path of transponder), which transmits a signal and moves along a route or path with at least a measuring station comprising antenna means for receiving said signal at least at two measuring points (fig. 11, receiver antenna positions B1 and B2) positioned at the two outer points of a line segment which crosses the course in a perpendicular manner (measuring stations B1 and B2 perpendicular to path of moving transponder 30), whereby said measuring station comprises: - a first receiver (Fig. 6, a first receiver B1) for receiving said signal through said antenna means at the one measuring point and - a second receiver (Fig. 4, a second receiver B2) for receiving said signal through said antenna means at the other measuring point, - high frequency phase measuring means (col. 3, lines 40-52, phase difference; col. 5, lines 21-26, high frequency requiring intermediate frequency (12.5 MHz)) measuring the phase difference between the output signal of the first receiver and the output signal of the second receiver, - evaluation means which, based on the measured phase difference, determines where the transponder passes said line segment.

Regarding claim 2, O'Connor teaches a system according to claim 1, characterized in that the transponder transmits a modulated signal, that the first receiver is followed by a first demodulator (col. 8, lines 45-65 and lines 57-58; decode the transponder ID; demodulator associated with decoding the transponder id) for demodulating the received signal, that the second receiver is followed by a second demodulator for demodulating the received signal, and that low frequency phase measuring means (Fig. 6, low frequency associated with intermediate frequency IF) measure the phase difference (Figs. 6 and 11, phase difference between B1 and B2 receivers) between the output signal of the first demodulator and the output signal of said demodulator at different time period or switched time.

Regarding claim 4, O'Connor teaches a system according to claim 2, characterized in that the modulated signal is obtained by amplitude modulation whereby the modulation signal is a pulse series by means pf which the amplitude of the carrier wave is modulated between 0% and 100% (Fig. 8, pulse form amplitude modulation of carrier wave by transponder).

Regarding claim 8, O'Connor teaches a system according to one of the preceding claims, characterized in that the measurement is repeated a number of times in a row course (col. 3, lines 40-52, location of transponder via phase differences at different time) to provide the movement direction of transponder), where-after the results are interpolated such that from the results the track can be derived which was followed by the transponder within said course (col. 3, lines 40-52, location of transponder via phase differences at different time; Fig. 6, phase measuring means associated with combiner 48 and IF at different time via switching 42) to provide the movement direction of transponder).

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Connor et al. (5,648,767).

Regarding claim 3, O'Connor teaches a system according to claim 2, characterized in that the evaluation means use the output signal of the frequency phase measuring means for position determination (col. 3, lines 40-52, location of transponder via phase differences at different time). But O'Connor does not teach the evaluation means use the output signal of the low frequency phase measuring means for "coarse" position determination whereas the output signal of the high frequency phase measuring means is used for "fine" position determining.

However, one of ordinary skill in the art recognizes the low frequency measurement is associated with long wavelength and the high frequency measurement is associated with short wavelength. Furthermore one skilled in the art inherently recognizes object recognition with short wavelength is better than object recognition with long wavelength, and therefore short wavelength provides fine position determination and long wavelength provide coarse position determination. Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to include the evaluation means use the output signal of the low frequency phase measuring means for "coarse" position determination whereas the output signal of the high frequency phase measuring means is used for "fine" position determining in the device of O'Connor because O'Connor suggests the evaluation means use the output signal of the frequency phase measuring means for position determination and one ordinary skill in the art recognizes the evaluation means use the output signal of the low frequency phase measuring means for "coarse" position determination whereas the output signal of the high frequency phase measuring means is used for "fine" position determining.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Connor et al. (5,648,767) in view of Rogers et al. (6,351,215).

Regarding claim 6, O'Connor teaches a system according to claim 1, characterized in that between ends of measuring points by two antennas is realized (Fig. 11, receiver antenna positions B1 and B2). But O'Connor does not teach the system comprises an elongated loop antenna consisting of two parallel antenna conductors extending a short mutual distance and having a length equal to the length

of said segment, which antenna conductors are connected at their ends where the measuring points are formed.

However, Rogers teaches, in the art of transponder location system, the system comprises an elongated loop antenna consisting of two parallel antenna conductors extending a short mutual distance and having a length equal to the length of said segment, which antenna conductors are connected at their ends where the measuring points are formed (fig. 10, col. 13, lines 14-38, two elongated parallel loop antenna 172-173 ) for the purpose of providing direction of object movement. Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to include the system comprises an elongated loop antenna consisting of two parallel antenna conductors extending a short mutual distance and having a length equal to the length of said segment, which antenna conductors are connected at their ends where the measuring points are formed in the device of O'Connor because O'Connor suggests between ends of measuring points by two antennas is realized and Rogers teaches the system comprises an elongated loop antenna consisting of two parallel antenna conductors extending a short mutual distance and having a length equal to the length of said segment, which antenna conductors are connected at their ends where the measuring points are formed for the purpose of providing direction of object movement.

***Allowable Subject Matter***

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 5, the prior arts fail to teach or fairly suggest between both ends of said line segment another N measuring points are realized such that the line segment is divided by N+2 measuring points into N+1 segments each having a length which is small enough to realize an unambiguous measurement within said segment, whereby the N+2 measuring points are connected to N+2 receivers, the output of each of said receivers is connected to a field strength measuring means, the output signals of all field strength measuring means are evaluated in a comparison circuit, which comparison circuit transfers the output signals of those two receivers having together the largest field strength, to a phase comparator to be mutually compared whereafter the resulting output signal of the phase comparator controls an evaluation unit.

Claims 7 is directly dependent on claim 5, therefore, the prior arts fail to teach or fairly suggest claim 7 for same reason that the prior arts fail to teach or fairly suggest claim 5.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matsuichiro Shimizu whose telephone number is (703) 306-5841. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik, can be reached on (703-305-4704). The fax phone number for the organization where this application or proceeding is assigned is (703-305-3988).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703-305-8576).

Matsuichiro Shimizu
February 22, 2005

MICHAEL HORABIK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600